MONOGRAPHS

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Nonsmooth Dynamics of Contacting Thermoelastic Bodies

(with Yu. Pyryev)
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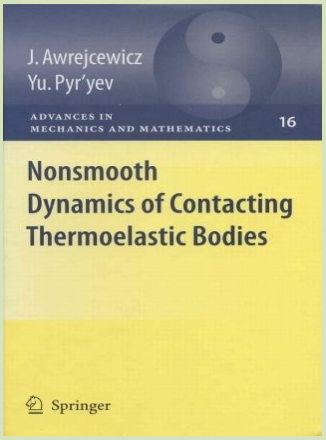
SUMMARY



[Preface & Contents]

[Book Review]
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This work is devoted to an intensive study in contact mechanics, treating the non-smooth dynamics of contacting bodies. Mathematical modeling is illustrated and discussed in numerous examples of engineering objects working in different kinematic and dynamic environments.

Topics covered in five chapters examine non-steady dynamic phenomena which are determined by key factors, i.e. heat conduction, thermal stresses and the amount of wear. New to this monograph is the importance of inertia factor, which is considered on a par with thermal stresses.

Principal features:

- Unique monograph to address the topic of dynamic contact problems in thermoelasticity, which takes into account inertial effects and influence of thermoelastic coupling for models of solids in contact
- Mathematical modeling methods are illustrated and applied to practical engineering problems, e.g. for improving the reliability and durability of machines and mechanisms under friction, heat and the amount of wear in contact
- Presents solutions that describe many interesting nonlinear effects Nonsmooth Dynamics of Contacting Thermoelastic Bodies is an engaging accessible practical reference for engineers (civil, mechanical, industrial) and researchers in theoretical and applied mechanics, applied mathematics, physicists and graduate students.